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! Sequence: momp
! Sequence: incC
! Sequence: pomp91a
CLUSTAL W (1.83) multiple sequence alignment

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momp      -----
incC      -----
pomp91a    MIMRLWGFLFLSSFCQVSYLRANDVLLPLSGIHSGEDLELFTLRSSSPTKTTYSLRKDF

momp      -----
incC      -----
pomp91a    IYCDFAGNSIHKFGAAFLNLKGDLEFFINSTPLAALTFKNIHLGARGAGLFSESNVTFKGL
           . . .

momp      -----
incC      -----
pomp91a    HILVLENNESWGGVLTTSGLDLSFINNTSVLCONNISYGGPGALLQGRKSKALFFRDNRG
           . . . * . . .

momp      -----
incC      -----
pomp91a    DRVLKTDVNKEFQMGAKPTTDTGNSAAPS-----
           QDRDLPTASIIQVGGAPTGGAGAPFQPG-----
           TILFLKNKAVNQDESHPGYGGAVSSISPGSPITFADNQEILFQENEGELGGAIYNDQGAI
           . . . . .

momp      -----
incC      -----
pomp91a    TLTARENPAYGRHMQDAEMFTNAACMALNIWDR--
           PADDHHHPPIPPPVVPAQIETEITTIRSELQIMR--
           TFENNFOQTTSFFSNKASFEELSIAATAISIHSGAIPYSLKTLQLKGAIHADYVHIRDC
           . . . . .

momp      -----
incC      -----
pomp91a    FDFVCTLGATSGYLKGNASAFNLVGLFGDNENQKTVKAESVPNMSFDQSVVELYTDTT
           STLQQSTKGARTGVLVVTAIIMTISLLAIIIIILAVLGFTG---VLFQVALLMQGETN
           HGSIVFEENSATAGGAIAVNAVCDINAQGPVRFINNSALGLNGGAIYMQATGSSILRLHAN
           . . . . .

momp      -----
incC      -----
pomp91a    FAWSVGARAALWECGCATLG-----
           LIWAMVSGSIICFIALIG-----
           QGDIEFCGNKVRSQFHSHINSTSNFTNNAITIQGAPREFSLSANEGHRICFYDPIISATE
           . . . . .

momp      -----
incC      -----
pomp91a    GYNSLYINHQRLLLEAGGAVIFSGARLSPEHKKENKNKTSIIINQPVRLCSGVLSTIEGGAIL

momp      -----
incC      -----
pomp91a    ASFQYAQSKPKVEELNVLNAAEF-----
           TLGLILTNKNTPLPAS-----
           AVRSFYQEGGLLALGPGSKLTQQKNSEKDKIVITNLGFNLNLDSSDPAEIRATEKASI
           . . . . .

momp      -----
incC      -----
pomp91a    TINKPKGYVGKEFFLDLTAGTDAATG-----
           EISGVPRVYGHTESFYENHEYASKPYTTSIILSAKKLVTAAPSREKDIQNLIIAESEYMG

momp      -----
incC      -----
pomp91a    TKDASIDYHEWQASLALSRYRLNMFTPYIGVKSBRASFDADTIRIA
           YGYQGSWEFSWSPNDTKEKKTIIASWTPTGEFSLOPKRRGSFIPTTLWSTFSGLNIASNI

momp      -----
incC      -----
pomp91a    QPKSATAIFDTTTLNPTIAGAGDVKTGAEGQLGDTMQIVSLQLNKMKSRSKSCGIAVGTTI
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pomp91a	VNNYLNSEVIPLQHLCEGGPVYQIMEQNPKQSSNNLLVQHAGHNVGARIPFSNTIL
momp	VLADKYAVTVETRLIDERAHVNAQFRF-----
incC	-----
pomp91a	SLALTQLFSSSSQQNVADKSHAQILIGTVSLNKSQALSLRSSFSYTEDSQVMKHVFPYK
momp	-----
incC	-----
pomp91a	GVSRGSRWNYGWSGSGVMSYAYPKGIRYLKMTPFVDLQYTKLVQNPFVETGYDPRYFSSS
momp	-----
incC	-----
pomp91a	EMTNLSLPIGIALEMRFIGSRSSLFLQVSTSYIKDLRRVNPQSSASLVLNHYTWDIQGVF
momp	-----
incC	-----
pomp91a	LKKEALNITLNSTIKYKIVTAYMGISSTQREGSNLSANAHAGLSLSF

“*” means that the residues or nucleotides in that column are identical in all sequences in the alignment

“.” means that conserved substitutions have been observed

“:” means that semi-conserved substitutions are observed

6693087pomp91a seq 947 aa linear PAT 20-FEB-2004

LOCUS AAS37561
 DEFINITION Sequence 3 from patent US 6693087.
 ACCESSION AAS37561
 VERSION AAS37561.1 GI:42715796
 DBSOURCE accession AAS37561.1
 KEYWORDS
 SOURCE Unknown.
 ORGANISM Unknown.
 Unclassified.
 REFERENCE 1 (residues 1 to 947)
 AUTHORS Murdin,A.D., Dunn,P.L. and Oomen,R.P.
 TITLE Nucleic acid molecules encoding POMP91A protein of Chlamydia
 JOURNAL Patent: US 6693087-A 3 17-FEB-2004;
 Aventis Pasteur Limited; Toronto;
 CAX;
 REMARK CAMBIA Patent Lens: US 6693087
 FEATURES location/Qualifiers
 source 1..947
 /organism="unknown"

ORIGIN

1	mkqmrllwgfl	flssfcqvsv	lrandvllpl	sgihsgedle	lftlrssst	kttylrlkdf
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121	hslvlennes	wggvlttsgd	lsfinntsvl	cqnnisygpg	gaillqgrks	kalfrrdnrg
181	tilflknkav	ngdeshpgyg	gavssispgs	pitfadnqei	lfgenegelig	gaiyndqgai
241	tfennfqts	ffsnkasfee	lsiaataisi	hsqaipyslk	tllqklgga	hadyvhirdc
301	kgsivfeens	ataggaiayn	avcdinaqgp	vrfinnsalg	lmggaiymqa	tgsilrlhan
361	qgdiefcgnk	vrsgfhshin	stsnftnnai	tlqgaprefs	lsaneghric	fydpiisate
421	nynslyinhq	rlleaggavi	fsgarlspch	kkenknktsi	inqpvrlcsg	vlslggail
481	ayrsfyqegg	llalggpskl	ttqgknsek	kivitnlgn	lenldssdpa	eiratekasi
541	eisgvprvyg	ntesfyenne	yaskpyttsi	ilsakklvta	psrpekdiqn	liiaeseymg
601	ygyqgswefs	wspondtkekk	tiaswtptg	efslpkrrg	sfipptlwst	fsglniasni
661	vnnylnnse	viplqhlcvf	ggpvvgimeq	npkqssnnll	vqhaghnvga	ripfsfntil
721	saaltqlfss	ssqqnvadks	haqiligtvs	lnkswwalsl	rssfsyteds	qvmkhvfpyk
781	gtsrgswrny	gwsqsvqmsy	aypkgyrylk	mtpfvdlqyt	klvqnpfvet	gydpryfss
841	emtnlslpig	halemrfigs	rsslflqvst	syikdlrrvn	pqssaslvin	hytwdiqgvp
901	lgkealnitl	nstikykitv	aymgisstqr	egsnlsanah	aglsisf	

LOCUS AAS33023 6686339incc seq 203 aa linear PAT 20-FEB-2004
 DEFINITION Sequence 3 from patent US 6686339.
 ACCESSION AAS33023
 VERSION AAS33023.1 GI:42707452
 DBSOURCE accession AAS33023.1
 KEYWORDS .
 SOURCE Unknown.
 ORGANISM Unknown.
 REFERENCE 1 (residues 1 to 203)
 AUTHORS Murdin,A.D., Dunn,P.L. and Oomen,R.P.
 TITLE Nucleic acid molecules encoding inclusion membrane protein C of
 Chlamydia
 JOURNAL Patent: US 6686339-A 3 03-FEB-2004;
 Aventis Pasteur Limited; Toronto;
 CAX;
 REMARK CAMBIA Patent Lens: US 6686339
 FEATURES Location/Qualifiers
 source 1..203
 /organism="unknown"
 ORIGIN
 1 mtspipfqss gdasflaeqp qqlpstsesg lvtqlltmmk htgalsetvl qgqrdrlpta
 61 siilqvvggap gggagapfqp gpaddhthpi pppvvpagie teittirsel qlmrstlqqs
 121 tkgartgvlv vtailmtis! laiiiiiilav lgftgvlpqv allmqgetnl iwamvsgsii
 181 cfialigtlg liltknktp1 pas

stephens momp
393 aa linear BCT 02-MAY-2006

LOCUS Q46409
DEFINITION Major outer membrane protein, serovar D precursor (MOMP).
ACCESSION Q46409
VERSION Q46409 GI:6707730
DBSOURCE swissprot: locus OM1D_CHLTR, accession Q46409;
class: standard.
created: May 30, 2000.
sequence updated: Nov 1, 1996.
annotation updated: May 2, 2006.
xrefs: X62918.1, CAA44701.1, AF063195.2, AAC31436.2, AE001273.1,
AAC68276.1, H71484
xrefs (non-sequence databases): PHCI-2DPAGE:Q46409,
GenomeReviews:AE001273_GR, InterPro:IPR000604, Pfam:PF01308,
PRINTS:PR01334

KEYWORDS Complete proteome; Ion transport; Membrane; Outer membrane; Porin;
Signal; Transmembrane; Transport.

SOURCE Chlamydia trachomatis
ORGANISM Chlamydia trachomatis
Bacteria; Chlamydiae; Chlamydiales; Chlamydiaceae; Chlamydia.

REFERENCE 1 (residues 1 to 393)
AUTHORS Sayada,C., Denamur,E. and Elion,J.
TITLE Complete sequence of the major outer membrane protein-encoding gene
of Chlamydia trachomatis serovar Da
JOURNAL Gene 120 (1), 129-130 (1992)
PUBMED 1398119
REMARK NUCLEOTIDE SEQUENCE [GENOMIC DNA].
STRAIN=D/B-120

REFERENCE 2 (residues 1 to 393)
AUTHORS Stothard,D.R., Boguslawski,G. and Jones,R.B.
TITLE Phylogenetic analysis of the Chlamydia trachomatis major outer
membrane protein and examination of potential pathogenic
determinants
JOURNAL Infect. Immun. 66 (8), 3618-3625 (1998)
PUBMED 9673241
REMARK NUCLEOTIDE SEQUENCE [GENOMIC DNA].
STRAIN=D/IU-71960

REFERENCE 3 (residues 1 to 393)
AUTHORS Stephens,R.S., Kalman,S., Lammel,C., Fan,J., Marathe,R.,
Aravind,L., Mitchell,W., Olinger,L., Tatusov,R.L., Zhao,Q.,
Koonin,E.V. and Davis,R.W.
TITLE Genome sequence of an obligate intracellular pathogen of humans:
Chlamydia trachomatis
JOURNAL Science 282 (5389), 754-759 (1998)
PUBMED 9784136
REMARK NUCLEOTIDE SEQUENCE [LARGE SCALE GENOMIC DNA].
STRAIN=D/UW-3/Cx

COMMENT On Sep 27, 2005 this sequence version replaced gi:7442973.
[FUNCTION] Structural rigidity of the outer membrane of elementary
bodies and porin forming, permitting diffusion of solutes through
the intracellular reticulate body membrane.
[SUBUNIT] Disulfide bond interactions within and between MOMP
molecules and other components form high molecular-weight
oligomers.
[SUBCELLULAR LOCATION] Bacterial cell outer membrane; multi-pass
membrane protein.
[SIMILARITY] Belongs to the chlamydial OMP family.

FEATURES
source Location/Qualifiers
1..393
/organism="Chlamydia trachomatis"
/db_xref="taxon:813"
gene 1..393
/gene="ompA"
/locus_tag="CT_681"

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                                stephens momp
Protein    /note="synonym: omp1"
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           /gene="ompA"
           /locus_tag="CT_681"
           /product="Major outer membrane protein, serovar D
           precursor"
Region     /...22
           /gene="ompA"
           /locus_tag="CT_681"
           /region_name="Signal"
           /inference="non-experimental evidence, no additional
           details recorded"
           /note="By similarity."
Region     /...23..393
           /gene="ompA"
           /locus_tag="CT_681"
           /region_name="Mature chain"
           /experiment="experimental evidence, no additional details
           recorded"
           /note="Major outer membrane protein, serovar D.
           /FTId=PRO_0000020147."

ORIGIN      1 mkkllksvlv faalssassl qalpvgnpae pslmidgilw egfggdpcdp catwcdaism
           61 rvgyygdffv drvlktdvnk efqmgakptt dtgnsaapst ltarenpayg rhmqdaemft
           121 naacmalniw drfdvfctlg atsgylkgns asfnlvglfg dnenqktvka esvpmnsfdq
           181 svvelytdtt fawsvgaraa lwecgcatlg asfqyaqskp kveelnlcn aaftinkpk
           241 gyvgkefpld ltagtdaatg tkdasidyhe wqaslaalsyr lnmftpyigv kwsrasfdad
           301 tiriaqpkas taifdtttln ptiagagdvk tgaegqlgdt mqivslqlnk mksrkscgia
           361 vgttivdadk yavtvetrli deraahvnaq frf

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